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| APPLICATION NO.           | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------|-------------|----------------------|---------------------|------------------|
| 09/994,049                | 11/27/2001  | Robert Frigg         | 8932-573            | 1188             |
| 20582                     | 7590        | 04/05/2004           | EXAMINER            |                  |
| JONES DAY                 |             |                      | ROBERT, EDUARDO C   |                  |
| 51 Louisiana Aveue, N.W   |             |                      | ART UNIT            |                  |
| WASHINGTON, DC 20001-2113 |             |                      | PAPER NUMBER        |                  |

3732

DATE MAILED: 04/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/994,049

Applicant(s)

FRIGG ET AL.

Examiner

Eduardo C. Robert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-20,22-29,31 and 32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-20,22-29,31 and 32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION*****Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 04, 2004 has been entered.

***Drawings***

The proposed drawings correction filed on August 13, 2003 were approved (see Final Action mailed on November 4, 2003). However, applicants have not filed "corrected drawings" as required in reply to the Final Office Action (see "Office Action Summary", mailed on November 4, 2003, paper no. 10). Item 11 of the "Office Action Summary" states:

11) ☒ The proposed drawing correction filed on 13 August 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

Thus, since applicants have not filed the "corrected drawings" the drawings filed on November 27, 2001 are still objected. Also see PTO-948 mailed on 05/16/03, paper no. 9.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-20, 22-29, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klaue et al. (U.S. Patent No. 5,810,823, Reference "AC" on PTO-1449) in view of Frigg et al. (WO 97/09000, Reference "AS" on PTO-1449).

Klaue et al. disclose a system comprising a bone plate 420 and a bone screw 415. The bone plate comprises an upper surface 424, a bone-contacting surface 423, a plurality of holes 421 extending through the upper and bone-contacting surface. The holes are dimensioned and configured to receive the bone screw 415. At least one of the holes 421 includes an annular protrusion 401 disposed on the bone-contacting surface and at least surrounding the hole (see Figure 8B, below).

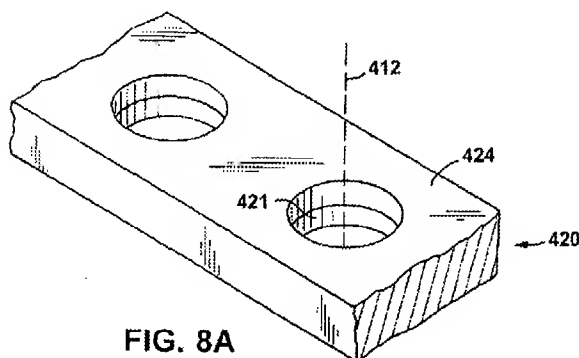


FIG. 8A

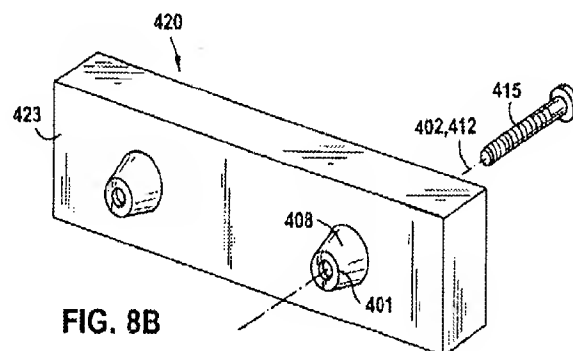


FIG. 8B

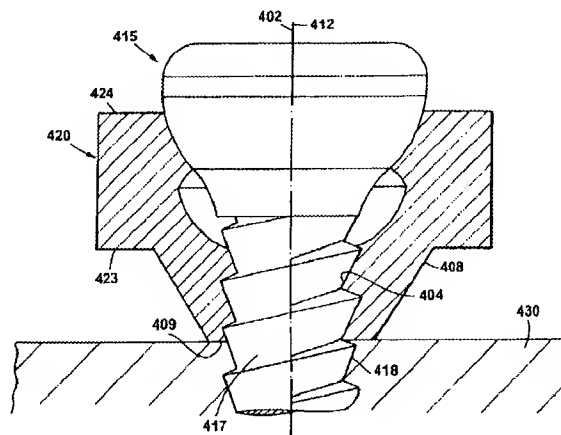


FIG. 9

The bone plate defines a nominal plate thickness in regions between the holes and the protrusion 401 defines an increased plate thickness that is greater than the nominal plate thickness (see Figure 9, above). Figure 9 shows that the increased plate thickness appears to be *about* 1.5 to about 2 times greater than the nominal plate thickness. The protrusion minimizes contact between the bone-contacting surface and a bone (see Figure 9, above, and col. 5, lines 37-40). The hole defines a central axis and the protrusion 401 tapers radially inward with respect to the central axis in a direction from the upper surface 424 toward the bone-contacting surface. The bone plate also includes an indentation in the upper surface 424 opposite from the protrusion 401 (see Figure 9, above). The indentation is substantially concentric with the protrusion. Figure 9 suggests that the protrusion tapers radially inward and defines a taper angle of about 40° to about 100°. The hole is provided with internal threads. The bone plate defines a longitudinal axis and the plurality of holes are spaced apart along the longitudinal axis. Klaue et al. disclose the claimed invention except for the threaded holes being tapered radially inward with threads from the upper surface to the lower surface and the screw head having threads complementing with the threaded taper holes.

Frigg, et al. disclose a bone plate with threaded holes having threads from an upper surface to a lower surface and bone screws with heads (see Figures 1-3, next page), wherein the holes are made taper and the heads of the bone screws are made taper and with threads to complement with the threaded taper hole in order to ensure optimal locking between the bone screws and bone plate when the bone screws are used in affixing the bone plate (see page 1, lines 10-13).

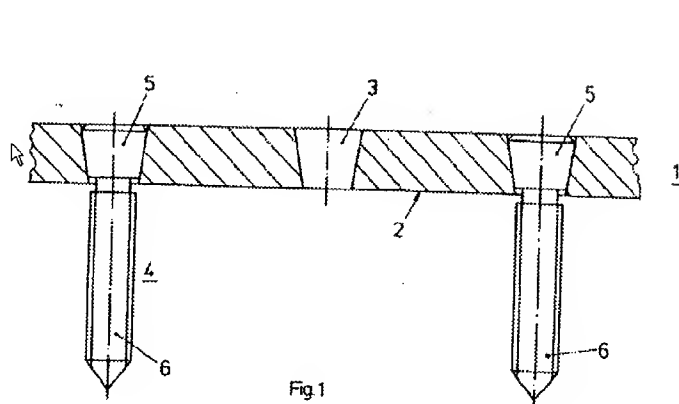


Fig. 1

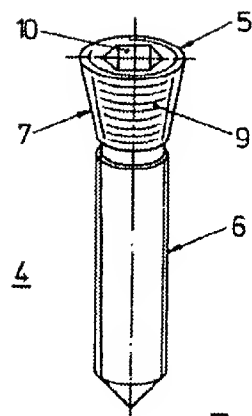


Fig. 2

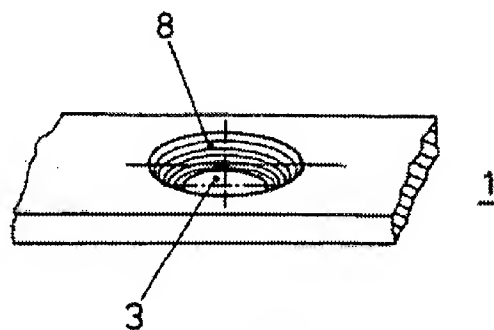


Fig. 3

It would have been obvious to one skill in the art at the time the invention was made to construct the system of Klaue, et al. with the holes of the bone plate being tapered with threads extending from the upper surface to the lower surface and the head screws complementing the tapered holes in view of Frigg et al., in order to ensure optimal locking between the bone screws and bone plate. With regard to claim 4, it would have been further obvious to one having ordinary skill in the art at the time the invention was made to construct the plate of the combination of Klaue et al. as modified by Frigg et al. with the nominal thickness being about 1 mm and the extension of the protrusion from the bone-contacting surface being about 0.8 mm,

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since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. With regard to claims 12, 14, 18, and 19, it would have been further obvious to one having ordinary skill in the art at the time the invention was made to construct the system of the combination of Klaue et al. as modified by Frigg et al. with the tapered hole having an angle of about 10° to about 30° and the external tapered screw head having a taper angle of about 20°, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

### ***Response to Arguments***

Applicant's arguments filed on March 04, 2004 have been fully considered but they are not persuasive.

In response to applicant's argument that the requirement of "the bone plate defines a nominal plate thickness in regions between the holes, and the protrusion defines an increased plate thickness that is about 1.5 to 2 times greater than the nominal plate thickness" and that this defines the present invention, it is noted that the requirement inserted into claims 1, 16, 20, and 27 was the subject matter of canceled claims 2, 3, 21, and 30 and this subject matter is disclosed and/or suggested by Klaue et al., as explained in the Final Action mailed on November 4, 2003 and further explained and shown above.

### *Conclusion*

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

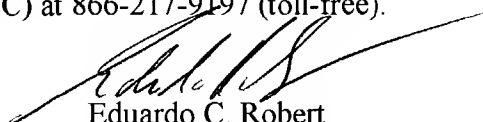
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eduardo C. Robert whose telephone number is 703-305-7333. The examiner can normally be reached on Monday-Friday, 9:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin P. Shaver can be reached on 703-308-2582. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Eduardo C. Robert  
Primary Examiner  
Art Unit 3732

E.C.R.